

TITLE: STRUCTURE OF SEAMLESS RAISED ACCESS FLOOR

BACKGROUND OF THE INVENTION

1. Field of the invention

The present invention is related to a structure of seamless
5 raised access floor, and especially to a structure of raised
access floor erected above an originally-built floor to allow
pipelines to be embedded between the floor and the originally-
built floor. The seamless design renders the raised floor an
effect of water tightness, it is convenient for installation,
10 easy for maintenance and changing, hence it is suitable for
further use for floors in humid environments such as in bathrooms,
kitchens, food processing factories or laboratories.

2. Description of the Prior Art

Normal raised access floors are mostly used nowadays in the
15 fields requiring allocating of networks such as the fields of
offices, factories and schools etc., the structure of each of
the fields includes a plurality of floor units, a plurality of
stringers and a plurality of pedestals; when in assembling, the
floor units are laid out on the stringers and the pedestals above
20 the originally-built floor, and each raised access floor is left
with gaps in order that the floor can be lifted and closed. And
by the fact that each raised access floor is left with gaps, the
floors sold in the markets are unable to be used in humid
environments such as in bathrooms, kitchens, factories or
25 laboratories to avoid water leaking to the space under the raised

access floor through gaps.

Normal bathrooms and kitchens are designed in the mode in pursuance of conventional pipeline embedment, the pipelines are embedded under the originally-built floor; however, once the
5 pipelines are broken or have water leakage, often the originally-built floor must be broken up to check where has the leakage, such work is very large as well as time and force consuming, and also costs high; when the pipelines are broken, water leakage and permeation often starts from the ceiling
10 beneath the originally-built floor to affect the living quality of the neighbor of the next lower story.

In view of the above stated, the inventor of the present invention developed a raised access floor based on his professional experience of years on raised access floors for use
15 in bathrooms, kitchens, factories or laboratories to solve the above stated problem.

SUMMARY OF THE INVENTION

The primary object of the present invention is to provide a structure of seamless raised access floor to allow pipelines
20 to be embedded between the raised access floor and the originally-built floor, wherein the seamless design renders the raised access floor an effect of water tightness, and the raised access floor is convenient for installation, easy for maintenance and changing.

25 To get the above stated object, the structure of seamless

raised access floor of the present invention comprises a plurality of floor units, a plurality of stringers, a plurality of pedestals and a water-tight plastisol layer.

The floor units are in the form of "T". Each floor unit has
5 its upper layer peripherally and outwardly extended equidistantly to form flanges, and each floor unit is stuck on the upper surface thereof with tiles. Each tile is provided peripherally with stepped retracting portions, in order that every two tiles on two mutually neighboring floor units can form
10 a channel after they are abutted on each other.

Each stringer is clamped beneath the flange between the two neighboring floor units.

Each pedestal is provided on the top thereof with a supporting surface for respectively supporting four mutually
15 neighboring stringers and a plurality of floor units.

The water-tight plastisol layer is filled in the abovementioned channel to complete the water-tight structure of seamless raised access floor.

The present invention will be apparent after reading the
20 detailed description of the preferred embodiment thereof in reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is an exploded perspective view showing the elements of the embodiment of the present invention;

25 Fig. 2 is a perspective view of the embodiment of the present

invention in assembling;

Fig. 3 is a sectional view of the embodiment of the present invention after assembling;

Fig. 4 is a plan view showing the appearance of the
5 embodiment of the present invention after assembling;

Fig. 5 is flow chart in practicing of the embodiment of the present invention;

Fig. 6 is a plan view of the embodiment of the present invention showing the state of having a room formed by providing
10 an originally-built lowered floor (such as for a bathroom);

Fig. 6 A is an enlarged schematic view showing with an enlarged scale the state of the floor and a wall of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

15 Referring firstly to Figs. 1-3, showing a preferred embodiment of the structure of seamless raised access floor of the present invention, the structure comprises mainly a plurality of floor units 1, a plurality of stringers 2, a plurality of pedestals 3 and a water-tight plastisol layer 4.

20 The floor units 1 are in the form of "T", each floor unit 1 has its upper layer peripherally and outwardly extended equidistantly to form flanges 11, and has vinyl tiles 5 stuck to the upper surface thereof; each tile 5 is provided peripherally with stepped retracting portions 51, in order that
25 every two tiles 5 on two mutually neighboring floors 1 can form

a channel 52 after they are abutted on each other. The stepped retracting portions 51 of each tile 5 can be provided in antecedence, or can be formed by grooving in site.

The stringers 2 are one by one arranged beneath the flanges 11 of corresponding two neighboring floor units 1, a stabilization pad 6 is fitted over four interconnected stringers 2, the stabilization pad 6 has an inverse "U" shaped and cross-shaped bottom 61, and is integrally provided thereon with a cross-shaped upright sheet 62, so that the stabilization pad 6 straddles the four interconnected stringers 2 in a cross shape.

Each pedestal 3 is provided on the top thereof with a supporting surface 31 for respectively supporting four mutually neighboring stringers 2 and a plurality of floor units 1.

The water-tight plastisol layer 4 is filled in the abovementioned channel 52 to complete the water-tight structure of seamless raised access floor.

When in practicing, as shown in Figs. 2-5, the pedestals 3 are well placed (at this time, the pipelines such as water pipes etc. are well laid out on the originally-built floor), then the four stringers 2 in a cross shape are placed on the supporting surfaces 31 of the pedestals 3 and are fitted and clamped thereover at the joints of every four interconnected stringers 2 with a stabilization pad 6 to stabilize the stringers 2. The elements are continuously installed in the same way, and the basic skeleton of the structure of seamless raised access floor

can be completed. Now the floor units 1 are placed one by one in the space framed by every four framing stringers 2. The flanges 11 of every floor unit 1 are abutted against corresponding stringers 2 and are aligned with the latter and positioned. By the design of the stabilization pads 6, when in assembling, all the floor units 1 can be abutted on one another closely to reduce shaking, and the gaps between every two of them can be kept unchanged, this can make convenient grooving. The vinyl tiles 5 stuck to the floor units 1 are grooved between every two mutually neighboring vinyl tiles 5 by using a conventional plastic floor grooving machine, thereby channels 52 are formed, then water-tight plastisol layers 4 are filled in the channels 52 to compactly fill up the channels 52 to a water-tight state, thus a large piece of seamless raised access floor (as shown in Fig. 4) is formed. The steps of its forming thereby includes:

- a. A plurality of pedestals 3 are well placed on the originally-built floor with pipelines such as water pipes etc. being well laid out on the originally-built floor;
- b. The four stringers 2 in the shapes of crosses are placed on the supporting surfaces 31 of the pedestals 3, and each stabilization pads 6 is fitted over four interconnected stringers 2 at the joint of the four stringers 2;
- c. A plurality of floor units 1 are placed one by one in the space framed by every four framing stringers 2;
- d. The vinyl tiles 5 provided by sticking between every two

mutually neighboring floor units 1 are grooved to form the channels 52;

e. The water-tight plastisol layers 4 are filled in the channels 52 to compactly fill up the channels 52 to a water-tight state.

As shown in Fig. 6 showing installation of the present invention in a bathroom, when in practicing, the bathroom to be partitioned can have its integrally connected floor lowered in advance, and pipelines are laid out in the space obtained by lowering the floor, then the seamless raised access floor is mounted above the pipelines, and water-tight sealing strips 7 (referring to Fig. 6A) are used to seal and stick firm the joints between the periphery of the entire raised access floor and the walls. In this way, the pipelines for the bathroom can be arranged in this story properly without having the defect of affecting the neighbor of the next lower story by water leakage. Because it is designed in non-close mortar casting; if pipes are broken and require repairing or adding pipes, only knives or a grooving machine is needed to cut away and remove the water-tight plastisol layers 4 to lift the floor units 1; and it needs only to refill water-tight plastisol layers 4 in finishing the work. Hence the present invention has the effects of convenience of installation, easiness of maintenance and changing.

The present invention thereby has the following advantages:

1. When the structure of seamless raised access floor of the

present invention is mounted on the originally-built floor, pipelines are arranged between the raised access floor and the originally-built floor, the seamless design between every two floor units renders the floor combined to get the effect of water tightness, and can be used for the environment of bathrooms, factories and laboratories. When in changing the raised access floor or in maintaining the pipelines under the floor, it needs only to remove the water-tight plastisol layers to lift the floor units; and when it is to reseal, it needs only to groove again and refill water-tight plastisol layers in the gaps. Hence the present invention has the effects of convenience of installation, easiness of maintenance and changing.

2. In the present invention, every four interconnected stringers can have a stabilization pad fitted thereover, so that after stabilization of the four interconnected stringers by means of the stabilization pad, the floor laid out on the stringers can be neatly aligned without deviation; and the stabilization pad can tightly press to fix the gaps between every two floor units. This is convenient to proceeding of grooving and filling of water-tight plastisol layers.

In conclusion, according to the above disclosed, the present invention can get the expected objects thereof to provide a structure of seamless raised access floor; it is extremely

industrially valuable. Having thus described my invention, what
I claim as new and desire to be secured by Letters Patent of the
United States are:

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